

XVIII.—THE MOGUL EMPERORS OF INDIA AS  
NATURALISTS AND SPORTSMEN.

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Mr. Salim A. Ali has done a great service to science in bringing together all references to animals contained in the works of the Mogul Emperors of India and in arranging them in a systematic way. No. 2 of volume xxxii of the *Journal of the Bombay Natural History Society* recently published, contains an account of fishes (pp. 268, 269) as described by these emperors. The descriptions are in almost all cases sufficient to enable the animals to be identified fairly closely. Mr. Ali has, however, not been able to do full justice to these descriptions in his interpretations and I therefore propose to add a few comments to the various passages quoted by Mr. Ali.

Babur refers to the fish of India as follows: 'Their flesh is delicate and they have few small bones. They are surprisingly active. On one occasion a net was laid in the river from side to side. Each side of the net was then raised a *gaz* (2½ feet) above the water, yet many of the fish leaped one after the other a full *gaz* over the net and escaped. There are besides in many rivers of Hindustan small fishes which if they hear a harsh sound or the treading of a foot instantly leap a *gaz* or a *gaz* and a half out of the water.'

There is no doubt that in the description of the flesh a reference is made to our larger marketable fish such as *Labeo rohita*, *Catla catla*, *Cirrhina mrigala*, *Barbus tor*, etc. The active species referred to as leaping is probably *Catla catla* (Ham. Buch.). Buchanan Hamilton writes about this fish as follows: 'It is a very strong active animal, and often leaps over the seine of the fishermen, on which account, when fishing for the *catla*, they usually follow the net in canoes, and make a noise by shouting and splashing with their paddles.'<sup>1</sup> I watched big specimens of *catla* leaping over nets at Niazbeg near Lahore in 1919. It is a common sight in Bengal (probably in other parts of India also) to see small fish leaping about on the surface of the water during a heavy rainfall, probably they react to the noise or disturbance produced by the falling rain. These small fish are usually the young of the species enumerated above.

Another reference in Babur's account runs as follows: 'One fish is the *kakeh*. On a line with its two ears issue two bones, three fingers-breadth in length. When caught it shakes these two bones which return a singular sound, whence they have given this fish its name of *kakeh*.' About the identity of this fish Mr. Ali remarks, 'The identity of a fish described by Babur in the following terms is a mystery. Sir Lucas King has made no comment on it, and it is surprising that such a singular animal, if it exists, should not be generally known. I can find no reference to anything like it in Annandale's paper either.' I have, however, no hesitation in stating that this mysterious creature is *Rita rita* (Ham. Buch.), which

<sup>1</sup> Day, *Fishes of India*, p. 553 (1878).

is a common fish at Lahore in winter and is called *Khagga*. One often hears hawkers in the streets selling *Ravi dē Khagge* (*Khagga* fish of the Ravi River). In a collection of drawings by Sir Alexander Burnes made during his expedition to Cabul in 1837-38 and recently described by me in the *Journal of the Asiatic Society of Bengal* I<sup>1</sup> find that this fish is called *Kagá* at Hyderabad and there seems to be no doubt that *Kakeh* is the same as *Kagá*. Moreover, the structure and the habit described by Babur exactly tally with those of *Rita rita*. In this species the pectoral fins are provided with very strong spines which are denticulated at both edges. They correspond to the two bones described by Babur and their length would depend on the size of the fish examined. These pectoral spines along with the powerful dorsal spine are used as organs of offence and defence and it is well known that the jagged spines of some of our Siluroids (cat-fishes) occasion intense inflammation and sometimes inflict dangerous wounds. During the winter season the individuals of this species hide themselves among pebbles and rocks in crevices and lie in such situations more or less in a state of torpor. At this season they are usually caught in great numbers by hand by diving to their places of retreat and holding them, when caught, in such a position that they are unable to move their spines. This is accomplished by holding the fish between the fingers in such a way that all the three spines stand erect. The spines of the cat-fishes are very much feared and they are broken off as soon as the fish are caught.

At Lahore *Rita rita* is sometimes called *Trikanda*, in which reference is made to the three spines of the fish and in the vernacular name *Khagga* I believe reference is made to the jagged condition of the spine, because the thorny budding leaf of the date-palm tree is also called *Khagga*, at least in the Gujranwala District of the Punjab. The dialect changes from district to district in the Punjab and I know that in this part of India the fishermen are often unable to explain the meanings of the vernacular names of fish.

The pectoral spines of *Rita rita* are provided with a set of very strong muscles and their proximal ends are specially modified to form a movable joint with the pectoral girdle.<sup>2</sup> When the fish vigorously shakes its pectoral spines, on being annoyed, a peculiar noise is produced by the movements of the condyles of the spines in the articular grooves. These facts are closely in accord with Babur's description of *Kakeh*.

The *Pulwah* of Sind is now called *Hilsa ilisha* and not *Clupea ilisha*. Mr. Ali observes that this species 'regularly ascends the Indus in February and March in enormous swarms for the purpose of spawning.' While travelling in the Punjab in 1926 I was informed by a reliable authority that these fish do not ascend in the Indus to the distance and in the quantities which are referred to in earlier records, and he actually feared that this highly-prized fish of Sind was in the process of abandoning the Indus altogether. Exact information on this point will be of immense economic importance.

<sup>1</sup> Hora, *Journ. As. Soc. Bengal* (n.s.) vol. xxii, p. 123 (1927).

<sup>2</sup> Hora, *Rec. Ind. Mus.*, vol. xxii, p. 30 (1921).

Jehangir's reference to the blind fishes of Andha Nag in Kashmir is very interesting. I do not know of blind fish from the freshwaters of India and it is to be hoped that any one who finds them in Kashmir or elsewhere in India will send them to the Indian Museum, Calcutta, for determination.

Jehangir mentions that, 'The best fish in Hindustan is the *Rohu* and after that the *Barin*. Both have scales and in appearance and shape are like each other. Everyone cannot at once distinguish between them. The difference in their flesh also is very small but the connoisseur discovers that the flesh of *Rohu* is rather more agreeable of the two.' Mr. Ali identifies *Rohu* as *Labeo calbasu* and suggests that the other may be the Indian Trout (*Barilius bola*).

*Rohu* is a name which is sometimes indiscriminately applied to the larger species of carp inhabiting our rivers, these may be *Labeo* or *Barbus*. I find (Hora, 1927, p. 124) that at Peshawar *Rohoo* is applied to a species of *Labeo* probably *dyocheilus* (McClell.) and at Hasan Abdal *Rāhu* is used for a species of *Barbus*, probably *tor*. Elsewhere in northern India and in the provinces of Bengal, Assam and Bihar and Orissa *Rohu* is used for *Labeo rohita* and to the best of my knowledge is never used for *Labeo calbasu*, which on account of its characteristic black colour is known as *Kalabasu* in Bengal. In the Punjab and Sind it is called *Di* and *Di-hee* respectively. *Rohu* (*Labeo rohita*) is considered to be a great delicacy and the Emperor Jehangir in all probability refers to this fish.

The vernacular name *Barin* is new to me and it is only by a process of elimination that I can identify it as *Cirrhina mrigala*. There are four scaly fishes in the Indian rivers that are highly prized for the flavour of their flesh and which grow to a fairly large size e.g., *Labeo rohita*, *Catla catla*, *Cirrhina mrigala* and *Barbus tor*. *Catla* can be readily distinguished by its characteristic upturned mouth. Connoisseurs always find that the flesh of *Barbus tor* is much better than of any other fresh water fish of India and moreover the form of *Barbus tor* is not as deep as that of *Labeo rohita* and the two can also be distinguished by the form of their heads. *Cirrhina mrigala* is very much like a *Labeo* and one is likely to be confused by the two forms; so it is probable that *Barin* refers to *Cirrhina mrigala*. It could have no reference to the Indian Trout (*Barilius bola*) which in its characteristic shape, markings and the position of the fins, etc., is quite distinct from any species of *Labeo* or the other carp named above.

There is no doubt that the Mogul Emperors of India (Babur and Jehangir) were careful students of nature and the descriptions of the animals that they have left behind them, though meagre, fully testify to this. I hope students interested in other groups of animals will further elucidate the facts so ably brought to light by Mr. Salim A. Ali.

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